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| EXAMINER | |
|---|---|
| DANIELSEN, NATHAN ANDREW | |
| ART UNIT | PAPER NUMBER |
| 2627 | |

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/797,417 | HJELMELAND, ROBERT W. | |
| | Examiner | Art Unit | |
| | Nathan Danielsen | 2627 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. Claims 1-22 are pending.

### *Specification*

2. The disclosure is objected to because of the following informalities: the term "interference fit" appears to be used inappropriately throughout the specification. The art-accepted definition of an "interference fit" is a fitting of two parts using friction, where the outer diameter of the inner part is greater than the inner diameter of the outer part, resulting in compression of the inner part and expansion of the outer part. This type of fit usually results in the destruction of one or both parts when separation of the two parts is attempted. The examiner recommends changing all instances of "interference fit" to --friction fit--. A friction fit is a fit where friction is used to hold two parts together, just as in an interference fit. However, a friction fit differs from an interference fit in that the two parts may be separated without damaging either part, due to the two parts having approximately the same inner and outer diameters, which produces a much more desirable outcome when attempting to eject a compact disc from the apparatus of the instant invention. Further, it is unclear if Applicant intends the term "compression arm" to mean a clamping member similar to that shown in drawing 4 of Okamoto (JP Patent Application Publication 01-171144) or those shown in figures 1-2C of Hoshi et al (US Patent 4,736,358). Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16, 19-22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16 and 21 are rejected as being indefinite because it is unclear if Applicant intends the term "interference fit" to indicate that the hub and the fan are permanently attached or if the hub and the fan are attached only as long as a compact disc has been inserted into the device for reading data from it

or writing data to it. For purposes of examination, the term "interference fit" has been interpreted to mean --friction fit--, as defined above.

Claims 19-22 are rejected as being indefinite because it is unclear from the specification and drawings exactly what structure is meant by the claimed "compression arm". For purposes of examination, the structure of the compression arm is interpreted to include a clamping member utilizing magnetic attractive force to compress the disc on a hub.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, and 7-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanouda (JP Patent Application Publication 08-279242).

Regarding claim 1, Kanouda discloses an apparatus for cooling a compact disc, comprising:

an actuator configured to rotate the compact disc (spindle motor 11 in drawing 2); and

an air-moving device driven by said actuator and configured to move air about the compact disc (wing sections 15).

Regarding claim 2, Kanouda discloses where said actuator comprises a motor (spindle motor 11).

Regarding claim 3, Kanouda discloses where said air-moving device comprises a fan (suggested by the application of wing sections 15 in ¶ 28).

Regarding claim 4, Kanouda discloses where the apparatus further comprises a hub configured to retain the compact disc, said actuator being coupled to said hub and being configured to rotate said hub (centering section 13a and magnet section 13b).

Regarding claim 5, Kanouda discloses where said air-moving device is attached to said hub (drawing 2).

Regarding claim 7, Kanouda discloses a device for at least one of reading and writing to a compact disc, comprising:

a hub configured to retain the compact disc (centering section 13a and magnet section 13b);

at least one propeller attached to said hub (wing sections 15); and

an actuator coupled to said hub and configured to rotate said hub such that said at least one propeller moves air about the compact disc (spindle motor 11).

Regarding claim 8, Kanouda discloses where said at least one propeller extends radially from said hub (drawing 2).

Regarding claim 9, Kanouda discloses where said at least one propeller has a pitch such that air is moved toward the compact disc when said actuator rotates said hub (¶ 28).

Regarding claim 10, Kanouda discloses where said at least one propeller comprises a plurality of propellers connected together by a closed ring (disk installation fixed part 13c in drawing 2).

Regarding claims 11 and 12, Kanouda discloses where said at least one propeller comprises a plurality of propellers defining a plane, said hub having an axis of rotation, said plane being nonperpendicular to the axis of rotation, wherein an angle between the plane and the axis of rotation is approximately between 60° and 89° (figure 2; where, due to the inclination of the wing sections 15, the highest point of one wing section, the lowest point of another other wing section, and any other point on any of the remaining wing sections will define a plane that is nonperpendicular to the axis of rotation and will be within the claimed range).

Regarding claim 13, Kanouda discloses where said at least one propeller is configured to move air adjacent a read/write side of the compact disc (Kanouda discloses where the wing sections 15 are an improvement to the conventional spindle motor and thus the conventional optical and/or magneto-optical disc recording/reproducing apparatus, such as that of Nguyen (US Patent 5,793,740), where both the spindle motor is located on the read/write side of the disc (figure 2)).

Regarding claim 14, Kanouda discloses where the apparatus further comprises a read/write head (inherent in optical disc devices) and where a radially outermost tip of said at least one propeller being closer to said hub in a radial direction than is said read/write head (drawing 2).

7. Claims 15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen.

Regarding claim 15, Nguyen discloses a method for processing a compact disc, comprising:

placing the compact disc on a rotatable hub such that a throughhole of the compact disc receives said hub (inherent and necessary for the device of figure 2 to read/write data from/to disc 34);

engaging the compact disc with a fan device such that the compact disc is biased farther onto said hub (inherent and necessary for the device of figure 2 to function);

attaching said fan device to said hub (inherent and necessary for the device of figure 2 to function); and

rotating said hub such that the compact disc and said fan device also rotate, and said fan device moves air about the compact disc to thereby carry heat away from the compact disc (final result ending in the rotation of the shaft 26 and disc 34 in figure 2).

Regarding claim 17, Nguyen discloses where said rotating-step includes blowing air toward the compact disc (air flow direction 40 in figure 2).

Regarding claim 18, Nguyen discloses where said rotating step includes drawing air away from the compact disc (air flow direction 40 in figure 2 and col. 3, lines 55-65).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda.

Regarding claim 6, Kanouda discloses everything claimed, as applied to claim 5. However, Kanouda fails to disclose where said air-moving device includes a throughhole receiving said hub.

However, making separable two items, e.g. separating the wing sections 15 and disk installation fixed part from centering section 13a and magnet section 13b, which are, in the Kanouda, one piece is an obvious matter of design choice (see In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) and MPEP § 2144.04(V)(C)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included separated the air-moving device from the hub, and thus providing a throughhole in the design of the separated air-moving device, for the purpose of allowing a broken or defective part to be replaced.

10. Claims 16, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda, in view of the Applicant's admitted prior art (hereinafter the AAPA).

Regarding claim 16, Nguyen discloses everything claimed, as applied to claim 15. Additionally, Nguyen discloses where a clamping member, including a fan, is placed on a hub (figure 2). However, Nguyen fails to explicitly disclose how the clamping member including the fan is held in place.

In the same field of endeavor, the AAPA discloses where said attaching step includes placing the clamping member on the hub such that a throughhole of said fan device receives said hub with a friction fit (¶ 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a friction fit to hold a clamping member in contact with a disc, for the purpose of holding the disc in place so the read head can read data from it (¶s 28 and 29).

Regarding claim 19, Nguyen discloses everything claimed, as applied to claim 15. Additionally, Nguyen discloses where a clamping member, including a fan, is placed on a hub (figure 2). However, Nguyen fails to explicitly disclose how the clamping member including the fan is held in place.

In the same field of endeavor, the AAPA discloses where said engaging step includes using a compression arm to push said clamping member into engagement with the compact disc (¶ 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a friction fit to hold a clamping member in contact with a disc, for the purpose of holding the disc in place so the read head can read data from it (¶s 28 and 29).

Regarding claim 21, Nguyen discloses everything claimed, as applied to claim 15. Additionally, Nguyen discloses where a clamping member, including a fan, is placed on a hub (figure 2). However, Nguyen fails to explicitly disclose how the clamping member including the fan is held in place.

In the same field of endeavor, the AAPA discloses where said attaching step includes using a compression arm to push a clamping member onto said hub with a friction fit (¶ 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a friction fit to hold a clamping member in contact with a disc, for the purpose of holding the disc in place so the read head can read data from it (¶s 28 and 29).

11. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda, in view of the AAPA, and further in view of Okamoto.

Regarding claims 20 and 22, Nguyen, in view of the AAPA, discloses everything claimed, as applied to claims 19 and 21, respectively. However, Nguyen, in view of the AAPA, fails to disclose where said compression arm is integrally formed with said fan device.

In the same field of endeavor, Okamoto discloses where said compression arm is integrally formed with said fan device (drawings 3 and 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have integrally formed said compression arm with said fan device, as taught by Okamoto, for the purpose of cooling an electromagnet in a magneto-optical device (Purpose and Title in Abstract).

***Citation of Relevant Prior Art***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Hirata (JP Patent Application Publication 10-275458), Takizawa (JP Patent Application Publication 04-061686), Yamada et al (JP Patent Application Publication 03-127395),

and Chang (US Patent Application Publication 2005/0216926) disclose various alternate embodiments of fan devices coupled to clamping members, spindle motors, and turntables.

***Closing Remarks/Comments***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 8:30 AM - 4:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Danielsen
09/11/2006

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SUPERVISORY PATENT EXAMINER